

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO. 0004		3. EFFECTIVE DATE 18-Jul-2003		4. REQUISITION/PURCHASE REQ. NO. W25PHS-3090-8556		5. PROJECT NO.(If applicable)	
6. ISSUED BY CODE US ARMY ENGINEER DISTRICT, PHILADELPHIA CONTRACTING DIVISION WANAMAKER BLDG, 100 PENN SQ EAST PHILADELPHIA PA 19107-3390		DACW61		7. ADMINISTERED BY (If other than item 6) CODE		E5CTCWAB	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				X	9A. AMENDMENT OF SOLICITATION NO. DACW61-03-R-0019		
				X	9B. DATED (SEE ITEM 11) 18-Jun-2003		
					10A. MOD. OF CONTRACT/ORDER NO.		
					10B. DATED (SEE ITEM 13)		
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted, or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required) DESIGN, CONSTRUCT, TEST AND DELIVER A CRANE BARGE AND DECK CARGO BARGE							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) THE ABOVE SOLICITATION IS AMENDED AS FOLLOWS. THE DATE AND TIME FOR RECEIPT OF PROPOSALS IS EXTENED UNTIL AUG. 5, 2003, AT 4:00 P.M., LOCAL TIME.  Section C, Specification: For Clin 0001:  a. Pages numbered C-4, C-18 C-21, C-22, C-38, C-43. C-99, C-102 and C-118 are deleted in their entirety. Substitute therefore with the attached pages numbered C-4, C-18, C-21, C-22, C-38, C-43, C-99, C-102, and C-118 annotated Amendment 0004. b. Pages C-44a and C-44b, annotated Amendment 0004, are hereby incorporated.  Section E: Pages numbered E-19, E-21, and E-22 are deleted in their entirety. Substitute with the attached pages numbered E-19, E-21, and E-22 annotated Amendment 0004.  All other information remains the same. Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				TEL: EMAIL:			
15B. CONTRACTOR/OFFEROR  _____ (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA  BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED  18-Jul-2003	

C004 CLASSIFICATION AND CERTIFICATION

The Contractor shall be responsible for preparing necessary drawings and calculations, obtaining necessary regulatory body reviews and approvals, obtaining necessary inspections and surveys during construction and for the certification and classing of the vessel as follows:

- ABS classification for “Maltese Cross A-1 Barge, River Service, Reinforcement “B” with crane service notation to be placed in “column 5”.

Note that ABS Reinforcement A structure is required in the rake. See Section C305.

The Contractor shall bear all expenses associated with the acquisition of the required classing and certification. The recommended ABS point of contact is Mr. Glenn Ashe who may be reached by phone, E-Mail or mail at: (703) 519-0801, [Gashe@eagle.org](mailto:Gashe@eagle.org), or 1421 Prince Street, Suite 200, Alexandria, VA 22314.

For the ABS certificate of classification, the owner shall be listed as “U.S. Army Corps of Engineers, Rock Island District”. The owner’s address for record shall be listed as CEMVR-OP-IM, 257 Grant Street, Peoria, IL 61603.

If the Contractor intends to launch, test, operate, or tow the vessel “out of class,” the Contractor must specifically advise ABS of such intent and incorporate any and all modifications required by that agency for such operation at no additional cost to the Government and with no additional contract time. Any such modification which, in the opinion of the COR, affects the arrangements, operability or suitability of the vessel shall be removed from the vessel by the Contractor at no additional cost or time and the vessel returned to new condition prior to Final Acceptance.

C005 VESSEL IDENTIFICATION

The vessel to be acquired through this solicitation has been assigned the following name and Marine Design Center hull and project number:

- MDC Hull Number 665
- MDC Project Number 2509
- Vessel Name DB-11

The vessel name has not been selected at this time. For the purpose of initial documents and drawing preparation, the title used shall be:

“THE MAZON REPLACEMENT”

C180 NOISE AND VIBRATION

## A. INTRODUCTION

Control of noise and vibration are paramount to the functionality of this vessel. Every effort shall be made to control noise and vibration. The Contractor shall be responsible, at his own cost, to meet the noise and vibration protection limits described herein.

The problems of noise and vibration on vessels are quite complex and can create conditions harmful to personnel, equipment and the vessel itself. Noise and vibration generated in one area of the vessel are transmitted by a variety of transmission paths to other areas of the vessel.

The barge shall generate considerable levels of noise and vibration. The equipment shall generate both direct airborne and structure-borne noise, which shall be transmitted through the structure and converted to airborne noise as it vibrates about the vessel.

Control measures are necessary to protect personnel and ensure safe operation of equipment and vessel. Furthermore, control measures are usually successful and cost effective if incorporated at the design stage.

After construction is complete, a vessel noise survey shall be conducted similar to those by NCE and in accordance with Section E of the Contract.

## B. NOISE CRITERIA

The following noise levels shall not be exceeded within a given space:

## 1. Hull Level

Stores	80 dB (A)
Lower Engine Generator Rooms	110 dB (A)

## 2. Main Deck Level

Exterior Deck	75-80 dB (A)
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## 3. Deckhouse

Office	65 dB (A)
Day Room	65 dB (A)

## **C300 STRUCTURE**

### **C301 GENERAL**

It is the responsibility of the Contractor to prepare the Detail Design with plating, bulkhead and framing construction, and weld details and submit them to ABS for approval. Production details of all major penetrations in principle hull structure shall be provided on the ABS approved drawings.

The Contractor shall submit calculations required to determine all principal hull, deck, and bulkhead scantlings. The Contractor shall also submit calculations required to determine foundation scantlings, rigging components and lifting pad eyes. Structural calculations shall be submitted with the associated structural drawings. Structural drawings will not be reviewed without accompanying calculations.

Excavator crawler path loadings shall be determined from the Caterpillar Hydraulic Excavator 375 MH at worst loading condition and boom azimuth.

The crawler path loading shall be reviewed and accepted by MDC prior to the structural design of the crawler path local structure.

### **C305 HULL STRUCTURE**

#### **A. GENERAL**

The hull shall be of all welded steel construction and divided into watertight compartments with transverse bulkheads, in accordance with the contract drawings.

All hull steel shall conform to ASTM specification A36-81a for structural steel and be certified by ABS. All welding and weld sizes shall be in accordance with the applicable standards of the American Bureau of Shipping.

The shell and main deck plating shall be constructed of longitudinal strakes of lengths consistent with accepted practice for hulls. All seams shall be connected with full penetration welds.

Hull rake plating transverse seams shall be a minimum of ~~may not fall within~~ 6 inches ~~forward or aft of~~ beyond the flat-of-bottom tangent line onto the flat bottom plate.

The transverse framing in the hull shall be open (minimize diagonals) as much as possible to facilitate access in storage areas and capstan space.

Main deck design uniformly distributed loading shall be 2000-PSF. Structure shall be sized in accordance with the latest ABS rules including RCN 6 January 2002 Steel Vessels for Service on Rivers and Intracostal Waterways.

Crawler path structure shall be ABS approved specifically for the PSF loading for the worst-case crawler loads.

~~The rake bottom structure on the working end of the barge shall be reinforced to facilitate grounding beaching for and crawl-on/crawl-off operations and accidental contact with the excavator bucket during digging operations. The design pressure loading on the rake plating shall be 5000 PSF resulting in heavy framing and plate thickness of ~1 inch in way of the working rake.~~

~~Corner, bilge, head log and stern log plating and stiffeners shall be heavily reinforced to withstand inland rivers workboat duty.~~

~~The rake structure on the working end of the barge shall be reinforced to facilitate riverbank and bottom grounding from crawl on/crawl off operations and accidental contact with the excavator bucket during digging operations.~~

~~The design pressure loading on the rake bottom plating shall be 5000-PSF resulting in heavy framing and plate thickness of ~1-inch in way of the working rake.~~

All other rake structure shall meet the requirements of ABS Reinforcement “A.”

## B LONGITUDINAL STRENGTH ANALYSIS

The contractor shall perform a longitudinal strength analysis to verify that the primary hull girder moment and shear in the ballasted condition of vessel loading is inside the allowable envelope, which shall be provided along the entire length of the hull.

## C. PENETRATIONS

When penetrations are made in watertight bulkheads, shell or deck, the plating shall be restored to watertight condition in accordance with the ABS Rules referenced in contract Clause C003. When penetrations are made in oil tight bulkheads or decks, the plating shall be restored to oil tight condition in accordance with the ABS Rules referenced in contract Clause C003.

All such penetrations and deck openings shall be suitably designed and reinforced in accordance with the National Shipbuilding Research Program Publication NSRP 0490 referenced in contract Clause C003.

All keels shall be installed on thickened insert plates with headers below the deck.

## D. INSERT PLATES

All deck fittings and deck equipment shall be mounted on insert plates welded continuously into the deck with bulkheads, headers or brackets below. Plates shall have 6-inch radius corners and extend a minimum of 6 inches beyond the item in all directions.

## E. LOCKS AND KEYS

All exterior doors, the raised watertight hatch for access to the Storage Room, all exterior control stations and the office interior door shall be fitted with suitable locks.

All door locks shall be lever type and suitable for marine service. The lock system shall be similar to Best Lock Corporation interchangeable core and master key.

The keys shall be delivered in a box stowed in the pump room wall, with numbered hooks for each type, with cross reference designation stenciled on the inside cover of the box.

Locks are keyed alike for each door except for Office, which is only opened by the Master key.

## C420 DECK FITTINGS

### A. KEVELS

The Contractor shall provide and install steel kevels at the locations shown on the contract drawing. The kevels shall be of the open type with smooth formed openings and manufactured of cast steel. Kevels with plate edges in openings are not acceptable. Kevels shall be continuously fillet welded to deck insert plates that are at least 1/8 inch thicker than the surrounding deck plate.

Only one (1) 48-inch kevel is required and it shall be installed at the stern log as shown on the Contract drawing 665-A215-01.

### B. BITTS

The Contractor shall provide and install 10-inch double bitts as shown on the contract drawing.

### C TOWING FITTINGS

Eight (8) cast steel open chocks, (4) at each end of the barge, shall be provided as shown on contract drawings. The chocks shall be 4x8-inch opening size.

### D FAIRLEADERS

Four (4), 10 inch, open type double sheaves shall be installed as shown on the contract drawings for use with the mooring winches.

C436 INSULATION AND SHEATHING

## A. INSULATION

Insulation shall be provided on bulkheads and overheads for all companionways and deckhouses on the main deck. Below deck, insulation shall be provided on bulkheads and side shell (to within 12 inches above the floor plates), and overhead on the weather bordering the Machinery Rooms and the Storage Rooms to within 12 inches above the floor plates that border unheated spaces or exterior.

Insulation, sheathing, and the mounting system used for both shall be suitable for marine workboat service, anticipating high levels of dampness and vibration, and temperature extremes. Insulation shall be of the fiberglass hull board type (similar to Claremont's, N3A Hull board) and in accordance with USCG regulations. Installation shall be in accordance with the manufacturers' recommendations for the intended service. However, as a minimum, the mounting studs shall be welded to bulkhead/roof structure. Adhesive mounting is not acceptable.

Insulation in all spaces with machinery and the storage room shall be specially coated with a damage resistant material similar to Claremont's "Tuff-Skin 1613". Insulation in these spaces shall be faced with Mylar or its equivalent to prevent oil absorption.

All insulation shall be kerfed to wrap around stiffeners larger than 4 inches in depth, with additional filler under flanges. The system shall be applied to stack soft patches such that the soft patches shall be removed with the system integral with the patch.

The insulation system shall be sufficient to meet the acoustic criteria in Clause C180, and the thermal criteria in Clause C685. In all cases, insulation thickness shall not be less than 4 inches.

All exposed edges shall be capped with sheet metal channels.

## B. SHEATHING

Sheathing shall be provided in all areas with insulation.

Sheathing in the Welding Shop shall be solid sheet metal suitable for the intended application with a curtain plate at deck level for the intended application.

Sheathing shall be 14 gage perforated, unpainted aluminum sheets with a minimum of 30% open area, except in way of the shop, which shall be solid steel galvanized sheets of suitable thickness.

Since the insulation treatment wraps around stiffeners, furring strips shall be required to provide a firm fair base for the sheathing. The furring strips shall be mounted to stiffeners with stand offs to avoid crushing the insulation and acoustical treatments.

Sufficient furring shall be provided to provide a fair surface for the sheathing. All furring shall be metal. No wood is permitted behind sheathing.

C455 HOISTS

The Contractor shall provide and install a chain driven 2-ton under-hung trolley hoist monorail system servicing the Store Room 2S, SC and 2P. Hoist and trolley travel shall be manual.

The system shall service all four (4) framing bays in each compartment as well as each hatchway. The number of hoists shall depend on the arrangement of the monorails.

A stowage hook(s) shall be provided for securing the trolley(s) when not in use.



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## C720 ONE LINE DIAGRAMS

The Contractor shall develop a One Line Diagrams during the Final Design Phase to provide a balanced 3-phase load and shall install the equipment accordingly.

Catalog cut sheets shall be provided for all AC system and DC system components with the submission of the respective system's one line diagram.

The following text shall be deleted from Contract Drawing 665-A720-01, Sheet 2 of 3, General Note 10:

*“THE GENERATORS SHOULD BE ABLE TO BE PARALLELED.”*

Parallel operation of the generators is not part of this solicitation.

## C725 CABLING REQUIREMENTS

### A. VOLTAGE DROP & CABLE SCHEDULE

The Contractor shall prepare separate cable schedules for all circuits in the AC electrical system and for all circuits in the DC electrical system.

A voltage drop calculation shall be included on each cable schedule for each circuit. For each AC circuit, a 5% maximum voltage drop is allowed from the switchboard to the connected load. For each DC circuit analysis, a 5% maximum voltage drop is allowed from the DC power source to the connected load.

The cable schedules and voltage drop analyses shall be submitted to the COR for review prior to the Construction Phase.

### B. CABLE REQUIREMENTS

Cables shall be similar to L.F. GAUBERT, Specification #474, TNIB Series, 90oC rated, armored, USCG & ABS approved. Armored cables used shall be basket weave armor (aluminum jacket) in accordance with IEEE-45 or equivalent (as classified by UL as IEEE-45 equivalent). The armored cable shall be installed grounded at both ends.

The Contractor shall select the size of the cables based on the voltage drop analysis and the current distribution requirements from the one line diagrams. All cables for receptacle circuits shall be 12 AWG or larger.

All wiring shall be clipped and bracketed to provide straight, vertical and horizontal runs throughout the vessel. Care shall be taken to run all power cables separate from all control signal cables in order to avoid field interference.

Single non-GFCI 20 A 120 VAC receptacle shall be installed in the Day Room for appliances. Each receptacle shall be on an individual circuit.

Provide 10 duplex non-GFCI 15 A 120 VAC receptacles in the office for appliances.

All exterior receptacles shall be watertight. They shall be located where they are protected and do not pose an obstruction. Ground fault circuit interrupters shall be provided for all receptacle circuits.

Exterior, waterproof, GFCI duplex receptacles shall be installed on each side of the deck house (16 receptacles) and 12 receptacles on the weather deck.

The contractor shall provide three DC warning light/beacons at the top of the deck house: one to be white for power out, the second to be blue for freeze alarm and the third to be red for fire.

Emergency lighting shall be provided, and suitably located for safe egress, with additional lighting provided at the main switchboard, and the motor control center.

The emergency lighting system shall be battery-powered fixtures that use a single dedicated battery set as their power source. The system shall have a transfer switch that shall be normally open when there is generator or shore power. Shall one of these power supplies not exist, the switch shall close and allow power to be fed to the emergency lights. There shall also be a manual switch with a cover at the top of the companionway. This switch shall be able to open the circuit and disconnect the lights from the batteries thus turning them off and not draining the batteries. The power supply from the battery bank shall have overload, short-circuit and ground-fault protection, and fusible disconnect switch.

A battery bank being composed of two 12-volt batteries connected in series. A self-regulating battery charger with an ammeter similar to C-Charger 93-2420-EL-A shall be provided for charging the 24-volt DC battery bank from the 208Y/120 VAC distribution system. All batteries provided shall be suitable for marine use and shall be rated for a minimum of 200 ampere-hours.

The contractor shall provide two 480-VAC, 3-phase, 60A, fusible disconnect switches and two 280VAC, 3-phase, 150A, fusible, disconnect switches in the shop. Actual location to be determined by the COR. Duplex GFCI receptacles shall be installed every 4 ft along the inside perimeter of the shop.

The navigation lighting system shall be set up for 120 volt AC. All navigation lights provided shall be similar to figures 1164 to 1168 series, manufactured by Perko, ~~except the whistle light provided by the air horn manufacturer (see contract Clause C472).~~

The Contractor shall develop lighting layout during the Final Design Phase.

C760 SHORE POWER

The available shore power at the home base is 480 VAC, 3-phase, 3-wire, 100 amp. Shore powers shall be connected to the vessel through a fixed connection. One connection shall be hard wired directly to a fusible disconnect located near to the PORT AFT spud winch at the main deck level and another located on the starboard and forward sides at the main deck level (see the General Arrangements – 665-A215-01).

The contractor shall provide and install a four conductor #1 AWG 100-foot length of shore power cable. One end of the cable shall be attached to the fusible disconnect and a shore power plug shall be attached to the shore end of the cable. The plug shall be an Appleton model ACP1034CD, 600 volt, 100 amp, 4-pole, 3-wire, style 2.

The contractor shall fabricate an enclosure to allow for the storage of the shore power cable.

The shore power service shall be installed with a pilot line to shore power breaker under voltage device to prevent connecting or disconnecting under load. The shore power circuit breaker shall be self-resetting.

The shore power service shall be labeled for operation in accordance with contract Clause C702.

C765 OFF-VESSEL SERVICE

Off-vessel power service is to be 480 volt AC, 3-phase, 3-wire for 100-amp service.

The contractor shall provide and install two non-fusible disconnects with off-vessel power receptacles located near to the shore power services. The receptacle shall be an Appleton model WSRD 103542 N4SQ, 600 volt, 100 amp, 4-wire, 3-pole and shall be fed through a circuit breaker mounted in the main switchboard and connected to the 480 volt main bus.

The contractor shall provide and install a 4-conductor # 1 AWG 100 feet of cable for off-vessel service. One end of the cable shall be fitted with a plug to match the off-vessel receptacle.

Demonstrate the operability of all relief valves and receiver drain valves.

Using the compressed air system, demonstrate the blowdown of the sea chests.

## 17 ALARM SYSTEMS

Demonstrate the operation of each alarm system:

- General Alarm System
- Bilge Alarm System

Each station of an alarm system shall be tested for operation showing the activation and silencing of the visual and audible alarms of the system.

Demonstrate the operation of the pilothouse top indicating lights for the Bilge Alarm System.

Demonstrate the operation of the battery charger for the General Alarm System.

## 18 WINCHES & CAPSTANS

Operate the deck winches in both directions under power. Demonstrate the operation of the selector switch and operation from the deck stations and the pilothouse stations.

~~Operate the capstan(s) in both directions under power. Demonstrate the operation of the switch.~~

Demonstrate the operation of the spud handling system by performing the following operations from both the local and remote control panels:

- Power-down and power-up operation at the rated speed.
- Stopping, braking and holding.
- Free fall operation. Lower the spud to within 6-feet of river bottom. Using the emergency free fall feature of the spud control system, free-fall the spud to set the tip into the river bottom. Verify that the control friction clutch arrests the motion of the drum with minimum without backlash of the drum wire. Engage the drum clutch and withdraw the spud from the river bottom by power-up operation.

## 23 DC ELECTRICAL SYSTEM

A General - Verify the operation of the batteries and battery chargers before and after starting the diesel generators.

B Distribution Panel - Demonstrate the operation of all circuit breakers in the DC panels.

C Demonstrate the operation of the battery selector switches. Verify the proper operation of the 24/12-volt DC converters.

## 24 LIGHTING

A Lighting - Demonstrate the operation of all interior lights, exterior lights, and floodlights. Demonstrate the operation of all lighting switches.

B Emergency Lighting - Demonstrate the operation of all emergency lights, including the manual override switch to turn the emergency lights on or off.

C Console Control Lighting - Demonstrate the operation of all the lights for all gauges and instrumentation, ~~installed in the pilothouse console.~~ Demonstrate the operation of the dimmer switches for the lights.

D Navigation Lights - Demonstrate the operation of all navigation lights. Demonstrate the operation of all circuit breakers and "bulb-out" alarms in the navigation lighting panel.

E Searchlights - Demonstrate the operation of the Xenon searchlights. Demonstrate the operation of the flanking lights. Demonstrate all searchlight controls.

## 25 RECEPTACLES

A Convenience Receptacles - Demonstrate the operability of all convenience receptacles by using 80% load for each receptacle. Check the receptacles for polarity. For GFCI types, demonstrate their ability to reset.

B Shore Power Receptacle - Demonstrate the operation of the shore power receptacle to supply power to the vessel.

C Off-Vessel Receptacle - Demonstrate the operation of the off-vessel receptacle to supply power overboard by using a load bank.

## 26 NOISE SURVEY

The survey will entail the taking of sufficient noise measurements in each of the vessel spaces to determine noise levels. A report shall be prepared containing the survey results.

The Contractor shall perform the survey using a subcontractor especially qualified for this work either by training or experience. The Contractor shall identify the proposed subcontractor in the Subcontracting Plan and include the subcontractor's qualifications.

The survey shall be conducted for each of the following conditions with all ventilation equipment and systems in full operation:

- ~~Both main propulsion engines at full speed, and one generator operating at normal bus load.~~
- ~~Both main propulsion engines off, and one generator running.~~

The sound levels reported for each compartment shall be based on the average of the broadband A-weighted sound pressure levels taken at various representative locations of the reverberant field of the compartment or space in question. These measurements shall typically be taken at locations within a space where operating personnel are expected to spend a majority of their time. Measurements shall be taken in accordance with NVIC 12-82.

A report shall be prepared by the Contractor detailing the test results. The report shall include:

- A tabulation of the actual raw data taken during the survey for noise.
- Sketches of the spaces measured with the recorded sound levels denoted at the location of their measurement. Reduced size general arrangement drawings will be acceptable for this purpose.

The Contractor shall take corrective action as necessary to achieve the required criteria. The report shall describe any compartments which present a noise hazard according to OSHA regulation, 29 CFR 1910.95 "Occupational Noise Exposure."